

Listing of Claims:

This listing of claims reflects all claim amendments and replaces all prior versions, and listings, of claims in the application. Material to be inserted is in **underline**, and material to be deleted is in ~~strikeout~~ or (if the deletion is of five or fewer consecutive characters or would be difficult to see) in double brackets [[]]. Any cancellations are without prejudice.

1. (Currently amended) An apparatus for characterizing cells, cell aggregates and/or tissue ~~with~~ **comprising:**

an analysis unit which includes means ~~for detecting~~ **by which** morphological parameters of cells, cell aggregates and/or tissue **are detected**, and which includes means ~~for evaluating~~ **by which** the detected morphological parameters **are evaluated** for the purpose of the objective morphological characterization of the cells, cell aggregates and/or tissue;

a database with reference parameters typical for cells, cell aggregates and/or tissue;
and

comparator means by which the detected parameters are compared with the reference parameters.

2. (Currently amended) The apparatus as claimed in claim 1, ~~characterized in that~~ **wherein** the analysis unit comprises an image-forming unit and an image analysis unit.

3. (Currently amended) The apparatus as claimed in claim 1 ~~or 2, characterized in that,~~ **wherein** the analysis unit is configured such that ~~the~~ **a** degree of confluence, ~~the~~ **a** cell morphology as a measure for the quality of the cell culture, ~~the~~ **a** proliferation behavior, ~~the~~ **a** presence of microorganisms and/or ~~the~~ **a** cell differentiation can be detected and evaluated.

4. (Currently amended) The apparatus as claimed in ~~any of the preceding claims,~~
~~characterized in that~~ claim 1, wherein the analysis unit includes means for the statistical
evaluation of the detected morphological parameters.

5. (Canceled)

6. (Currently amended) The apparatus as claimed in ~~any of the preceding claims,~~
~~characterized in that~~ claim 1, wherein the analysis unit includes means by which adjacent pixels
of a detected image with similar brightness values are combined to one image object.

7. (Currently amended) An apparatus for cultivating cells, cell aggregates and/or
tissue ~~including~~ comprising:

an incubator, ~~characterized in that the apparatus furthermore includes and~~
a device for objectively characterizing cells, cell aggregates and/or tissue ~~as claimed in~~
~~any of claims 1 to 6,~~ the device an analysis unit which includes means by which
morphological parameters of cells, cell aggregates and/or tissue are detected, and which
includes means by which the detected morphological parameters are evaluated for the
purpose of the objective morphological characterization of the cells, cell aggregates and/or
tissue; a database with reference parameters typical for cells, cell aggregates and/or tissue;
and comparator means by which the detected parameters are compared with the reference
parameters.

8. (Currently amended) The apparatus for cultivating cells as claimed in claim 7, ~~characterized in that~~ wherein the apparatus furthermore includes a manipulator, a transporter for transporting one or more cell culture vessels between the incubator, the manipulator and the analysis unit as well as a control unit for operating the apparatus.

9. (Currently amended) The apparatus as claimed in claim 8, ~~characterized in that~~ wherein the control unit is configured such that the apparatus is operated automatically.

10. (Currently amended) A method for characterizing cells, cell aggregates and/or tissue, comprising:

~~in which~~ detecting morphological parameters of the cells, cell aggregates and/or tissue; ~~are detected and~~

then evaluating the detected morphological parameters ~~are then evaluated~~ in a manner suitable for the ~~purpose of the~~ objective morphological characterization of the cells, cell aggregates and/or tissue based on the evaluation, the detected parameters being compared with reference parameters typical for cells, cell aggregates and/or tissue, which are stored in a database.

11. (Currently amended) The method as claimed in claim 10, ~~characterized in that~~ wherein statistical values characteristic for the cells, cell aggregates and/or tissue are determined from the detected parameters ~~for the purpose of evaluation.~~

12. (Currently amended) The method as claimed in claim 11, ~~characterized in that~~ wherein the statistical values are compared with values from a reference database which contains values characteristic for cells, cell aggregates and/or tissue.

13. (Currently amended) The method as claimed in ~~any of the preceding claims,~~ ~~characterized in that~~ claim 10, wherein the method furthermore includes the cultivation of cells, cell aggregates and/or tissue.

14. (Currently amended) The method as claimed in claim 13, ~~characterized in that~~ wherein the cell cultivation is performed in dependence on the evaluated parameters.

15. (Currently amended) The method as claimed in ~~any of the preceding claims,~~ ~~characterized in that~~ claim 13, wherein the detection and evaluation of the morphological parameters as well as the cultivation of cells are effected automatically.